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ABSTRACT

Three talking dictionaires designed to increase independence and resource-use skills of handicapped children have specific advantages and limitations. System I involves a random access tape recorder, a printed or braille dictionary which contains the inquiry numbers for words, a console (similar to an adding machine) on which the number is punched, and a microphone through which the word is spoken after being automatically searched. A major limitation of System I is the chance for student error. System II uses a magnetic card reader (similar to the Language Master). A sighted student searches for a word in the card reader, removes the card, and places it on the play-back device, which sounds the word from the tape recorded strip at the card's lower edge. Shortcomings of System II include a bulky card file and need for the card's return to the correct alphabetical position. Advantages include teacher selection of a word list for student use as well as low cost. System III is essentially an automated version of System II, however the search for the correct card and maintenance of the card file are handled by automatic card-sort equipment. The only requirement for System III is sufficient student coordination to punch into a search card and insert the card into the inquiry console. System III is fast, accurate, and expensive. (MC)

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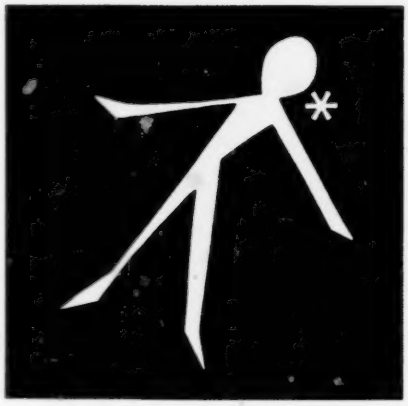

USOE/MSU
REGIONAL
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MATERIALS
CENTER FOR
HANDICAPPED
CHILDREN
AND YOUTH

THE TALKING DICTIONARY

Paper No. 2

THE PROSPECTUS SERIES

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THE TALKING DICTIONARY

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THE PROSPECTUS SERIES

--Papers dedicated to the exchange of
ideas about new or improved
use of instructional materials

Paper #2 -- The Talking Dictionary

One use of a dictionary is to teach children the accepted pronunciations of words. The printed dictionary provides a phonetic index of words for children able to grasp the symbols used and convert them to aural characteristics. This does not include all children, as many handicapped children are unable to get much pronunciation assistance from the dictionary. This need is then typically supplied by an already-busy teacher. "How do you pronounce this word?" and "What does this spell?" are rather unfortunate questions for the child to ask. First, he becomes more dependent on the teacher; and second, he loses the impetus to develop an important resource-use skill.

A "Talking Dictionary" is now feasible. There are those mechanical-electronic systems proposed as alternate forms of the "Talking Dictionary," each having advantages and limitations. While very different from a mechanical point-of-view, the purposes and general use of these devices are similar: the student inquires of the system when he wants to hear a word. This is a desirable learning aid for vocabulary expansion and for foreign language reading.

System I (Random Access Tape Recorder). The heart of the Talking Dictionary under System I is a random access tape recorder. A large-capacity tape is automatically searched to find the particular small section of the tape which contains the recording of the word required by the inquiry. The "dictionary" is the recording which contains a large number of words -- selected in terms of the reading vocabulary needs of a particular level of learners -- and the electronic "address" for each word. The inquiry is first made to a printed dictionary, which can be a

standard dictionary. This printed or braille dictionary provides definitions and tells the inquiry number for the particular word on the "Talking Dictionary". This inquiry number is punched into the console of the Talking Dictionary (the console looks much like a modern adding machine). Then the electronic search mechanism takes over and rapidly locates the proper point on the tape, plays the requested word through a small speaker or earphone and automatically shuts down to await the next inquiry. The student can immediately ask for repetition of the word by hitting a "repeat" key.

The major limitation of System I is the necessity for a manual look-up and the inquiry through a numeric code. Chance for student error in making a proper inquiry is fairly large.

System II (Magnetic Card Reader). The second feasible version of the Talking Dictionary uses a magnetic card reader of the sort sold by Bell and Howell as the "Language Master". A large set of data cards with magnetic tape bonded to the bottom edges are arranged in an alphabetic file. Sighted students search for a word in the alphabetic card file in much the same manner as in a regular dictionary. When the card showing the hunted word is located, it is removed from the file and placed on the play-back device which produces the audible pronunciation of the word from the tape recorded strip bonded to the edge of the card. The card is then returned to the file. The play-back device looks much like a regular portable tape recorder without reels or spindles. The card is dropped into a slot and is automatically moved past the magnetic pick-up head by a powered roller. (The same technique can be applied to cards with the words imprinted in braille.)

In this simplest form of System II there are several important shortcomings: 1) the card file for a dictionary of more than 1,000 words is a fairly bulky array; 2) the return of each card to its proper location in alphabetic order is too much to ask of young children. Using a separate bin or drawer for each letter of the

alphabet will provide a partial solution for the problem of bulkiness. A diagonal color slash across the top of each card deck could provide a quick visual check on the order of the cards and would be a partial solution to the problem of maintaining the file in alphabet order.

Considering these problems and their partial solutions, it is suggested that System II be restricted to small dictionaries of less than 1,000 words and for special word lists to accompany particular reading assignments. For the latter use the teacher may select appropriate word cards -- perhaps twenty or thirty -- from the master file to make available to students working on a designated reading assignment. A major advantage of System II is the low cost.

System III is essentially an automated version of System II. The same sort of data cards with magnetic tape strips attached are used as the "talking" words in the dictionary. The same play-back device produces the audible pronunciations of the words. The search for the correct card and the maintenance of the card file is handled by automatic card-sort equipment. An inquiry is punched into a "search card" by the student and inserted into the inquiry console which looks like a typewriter console. Thus the only important limitation of System III is the requirement of enough physical coordination in the pupil to enable him to produce the correctly spelled inquiry card. The advantage of this system is that it is fast and accurate; the disadvantage is its cost.

Summary. Whether the "Talking Dictionary" will provide help for significant instructional problems is not clear. The purpose of this paper and the brief descriptions of each of three possible systems is to seek reactions and suggestions from teachers. It may well be that the "Talking Dictionary" in a simple form, or in an elaborate form in a large residential school, could be planned in prototype for a field test with some types of handicapped children.